

Cable
Text:

C O N F I D E N T I A L ISTANBUL 00050
CX:

ACTION: ECON
INFO: CONS PA RAO FAS MGT PMA FCS POL DCM AMB

DISSEMINATION: ECON /1
CHARGE: PROG

VZCZCAYO469
PP RUEHAK
DE RUEHIT #0050/01 0420611
ZNY CCCCC ZZH
P 110611Z FEB 10
FM AMCONSUL ISTANBUL
TO RUEHC/SECSTATE WASHDC PRIORITY 9502
INFO RUEHZL/EUROPEAN POLITICAL COLLECTIVE PRIORITY
RUFOADA/JAC MOLESWORTH RAF MOLESWORTH UK PRIORITY
RUCPDOG/DEPT OF COMMERCE WASHDC PRIORITY
RUEAIIA/CIA WASHDC PRIORITY
RUEKJCS/DIA WASHDC PRIORITY
RUEATRS/DEPT OF TREASURY WASH DC PRIORITY
RHMFISS/DEPT OF ENERGY WASH DC PRIORITY

C O N F I D E N T I A L SECTION 01 OF 03 ISTANBUL 000050

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TAGS: [ENRG](#) [SENV](#) [ECON](#) [PREL](#) [PGOV](#) [KGHG](#) [TU](#)
SUBJECT: ISTANBUL'S LANDFILL GAS UTILIZATION PROJECTS

Classified By: CONSUL GENERAL SHARON A. WIENER FOR
REASONS 1.4(B) AND (D)

1. (C) Summary. Landfill gas utilization, a growing alternative energy technology with compelling environmental benefits, is in its early stages in Turkey. Ortadogu Enerji won a tender from the Istanbul Municipality to implement and run Istanbul's two landfill energy projects for 23 years, and electricity production at its largest landfill power plant on Istanbul's European side officially kicked off in April 2009. Ortadogu Enerji's monopoly on Istanbul landfill gas-to-energy projects probably is related to the company leadership's personal ties to Prime Minister Erdogan, who was mayor during the initial phases of the landfill conversions. Ortadogu Enerji CEO Mehmet Gur said that the projects are already profitable due to the large size of Istanbul's landfills. He added that pending national legislation on renewable energy will more clearly define future profit margins for the company's landfill gas utilization endeavor. Turkey will increasingly need to take environmental considerations into account as it works to fulfill EU membership criteria, and landfill gas and other biomass technology may play a small part in increasing Turkey's energy efficiency. End Summary.

Landfill Gas-to-Energy -----

2. (SBU) Landfill gas utilization ("Copten enerji") is in its early stages in Turkey, but is a growing energy technology worldwide. Municipal solid waste contains materials that decompose when dumped, compacted, and covered to produce carbon dioxide and methane. Landfill gas energy facilities capture the methane (the principal component of natural gas) and combust it for energy. Istanbul's two landfill gas power projects, both owned by Ortadogu Enerji, began producing electricity last year. Landfill projects are limited in their power-generation capacity, but our contacts at Ortadogu said that Turkey has over 250 megawatts (MW) total capacity for landfill projects, enough energy to support the monthly requirements of approximately 714,000 average households in Istanbul. They added that landfill gas is currently a more reliable source of energy than wind energy. (Note: Istanbul is one of the only viable and profitable landfill gas project

sites in Turkey because a very large population is required in order to produce sufficient sources for the electricity, but there are also existing projects in Ankara and Bursa. End Note.)

13. (U) The environmental benefits of landfill gas projects are compelling. According to Yusuf Gult, an electrical engineer at Ortadogu Enerji, Istanbul's landfill gas projects result in a one million ton carbon dioxide equivalent emission reduction each year. The total emission reductions over seven years are estimated to be 6,900,000 tons of carbon equivalent. Prior to the completion of these two landfill gas-to-energy projects, Istanbul's established practice was uncontrolled release of landfill gas which is a potentially dangerous method of managing methane. Unless avoided by placing pipes throughout landfills, accumulations of methane can lead to explosions; in 1993 a methane explosion in Istanbul's Umraniye Hekimbasi landfill claimed 39 lives.

Ortadogu Group Monopolizes Istanbul's Garbage

14. (SBU) Ortadogu Enerji won a tender from the Istanbul Municipality in March 2007 to implement and run Istanbul's two landfill energy projects for 23 years, and electricity generation began in December 2008 with an official opening ceremony -- attended by Prime Minister Erdogan -- in April 2009. CEO Mehmet Gur told Poloff that Ortadogu Enerji's landfill gas project is the largest in Europe and one of the world's top five. Ortadogu has two sites in Istanbul -- one in Komurcuoda near Sile on Istanbul's Asian side and one in Odayeri landfill near Kemerburgaz on the European side. (Note: The Komurcuoda landfill contains more than 14 million tons of solid waste and is situated on 44 hectares. The larger Odayeri landfill contains over 32 million tons of waste and is located on 51 hectares of land. End Note.). The two sites together have an estimated production capacity of between 30 and 40 MW of electricity -- two thirds of which is in Odayeri -- and they are powered by 23 GE Jenbacher landfill gas engines. Ortadogu Enerji representatives told us they anticipate the project will reach full capacity this year.

History and Mechanics of the Odayeri Landfill Project

15. (U) Turkey's first landfill gas to energy site, the Odayeri landfill, is estimated at 4 MW capacity with the inbuilt capacity to be upgraded to 6 MW. The landfill itself was active between 1980 and 1998, and building a power station on the site was first suggested in a report commissioned in 1992 by the Istanbul Municipality. (Note: Waste management in Istanbul was a serious problem in the early 1990s; then-Mayor Nurettin Sozen commissioned studies into several related management areas and Prime Minister Erdogan was responsible for the implementation of many of these recommendations during his tenure as Istanbul mayor. End Note.) The landfill was reengineered and rehabilitated following a waste avalanche and the power station built under contract for the Istanbul Municipality, which then opened the tendering process won by Ortadogu in 2007.

16. (SBU) At the Odayeri landfill power plant, the methane gas formed by the fermentation of domestic waste in the landfill is vacuumed out and used to produce electricity (Note: In this regard it differs from European examples such as the Sysav plant in Sweden, which burns domestic waste and uses gas emitted during the burning process to produce electricity. End Note.) A polyurethane pipe is inserted into the one hundred gas collection wells and acts as a feeder into the collection station. Seven blowers pull the gas -- which is 50 percent methane -- from the collection wells to the collection header and further downstream. (Note: Methane levels in landfill gas can vary widely, from as much as 80 percent to trace quantities. If the methane level falls below the 40 to 50 percent range its usefulness as a fuel diminishes and quality of the technology required to use it must increase; in general, below 30 percent methane the gas

becomes more difficult to use. End Note.) Only about 40 percent of input can be converted into electricity; the other 60 percent breaks down into exhaust, cooling water, and lubrication oil. If the landfills were near industrialized areas, it might be possible to sell the steam output, but in the case of the Odayeri landfill, the residential area nearby has an existing natural gas infrastructure. For Ortadogu Enerji, a side project deals with the conversion of this extra heat into additional energy; in situations with low gas extraction rates, this heat can be used to power infrared heaters in local buildings, greenhouses, and artisan studios.

Cash from Trash? Renewables Legislation Could Up Profits

¶17. (SBU) Ortadogu Enerji CEO Gur said that without the promise of a profit they would not have attempted to get the project on its feet; although landfill gas projects are expensive and difficult to self-finance, the large size of Istanbul's landfills makes profitability possible. Gur told Poloff that the landfill gas project is already profitable. The two plants are expected to produce a total of 35 to 40 megawatt hours of electricity each day, which is sold to TETAS for the municipality's power distribution grid. Observers have estimated that this is enough energy to satisfy the needs of 112,000 residences and reduce Istanbul's carbon emissions by 1.2 million tons.

¶18. (SBU) Legislation on renewable energy, currently pending in parliament, will more clearly define the future profit margins for Ortadogu's endeavor. In its effort to expand generation capacity and diversify away from natural gas for electricity generation, the Ministry of Energy has proposed new legislation that would raise feed-in tariffs for renewable power generation to a range of EUR 0.07/kWh - 0.25/kWh. According to Gur, landfill gas will fall into the "biomass" category in the law, and the price currently being considered is EUR 0.14/kWh. Gur said that Ortadogu's feasibility studies on the landfills concluded that a EUR .055/kWh price would result in profit, and the current selling price for their electricity is EUR 0.06 to 0.08/kWh. The project is being registered for international carbon credits to help provide financial support through a carbon credit trading system, making it more economically attractive.

Comment

¶19. (C) Ortadogu Enerji's monopoly on Istanbul landfill gas-to-energy projects almost certainly has something to do with the company leadership's personal ties to Prime Minister Erdogan, who was mayor during the initial phases of the landfill conversions. Ortadogu's office walls are covered with photographs of the company's conservative leaders together with Erdogan at social and business events, and local staff suggest that the company's ties to Erdogan date back to teenage friendships in Istanbul's Kasimpasa district.

¶10. (U) Landfill gas and biomass represent a relatively small element in Turkey's overall alternative energy equation. As Turkey works to meet EU membership criteria, it will increasingly need to take environmental considerations into account, and improved energy efficiency is a key to this strategy. The Odayeri power station, the first of its kind in Turkey, established the feasibility of installing and operating such small-scale renewable power systems within the structure of energy generation and distribution networks.

WIENER